

Fig. 1

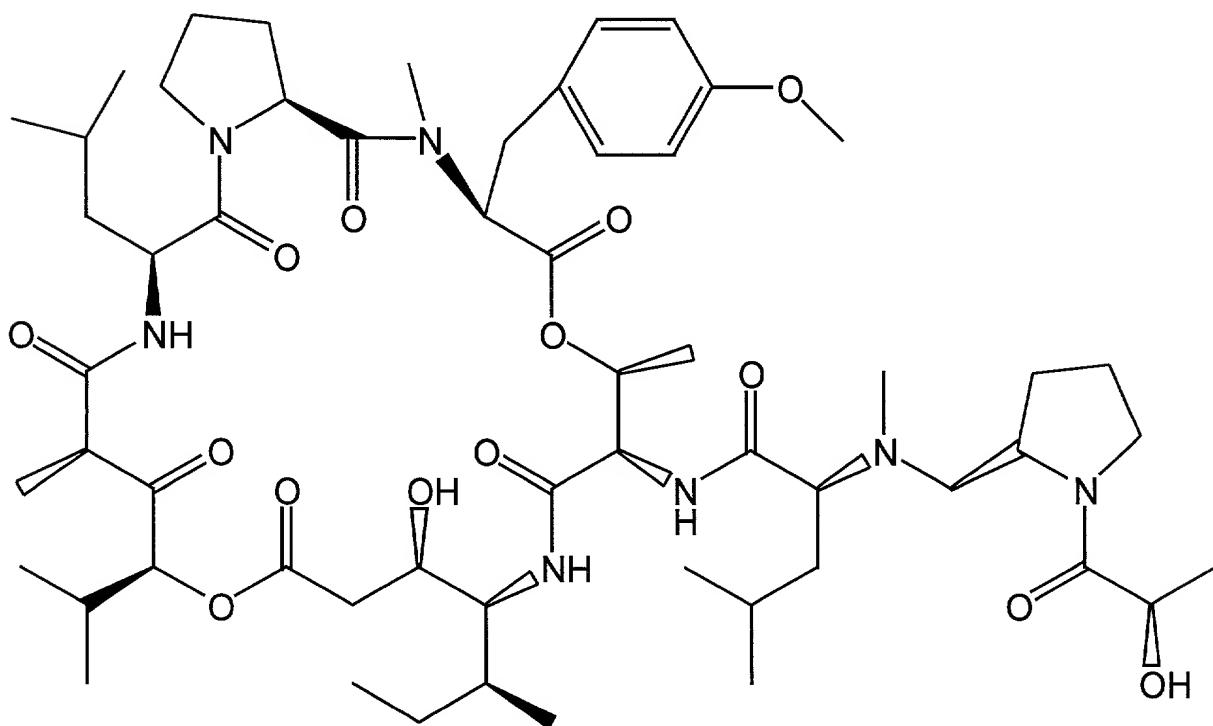
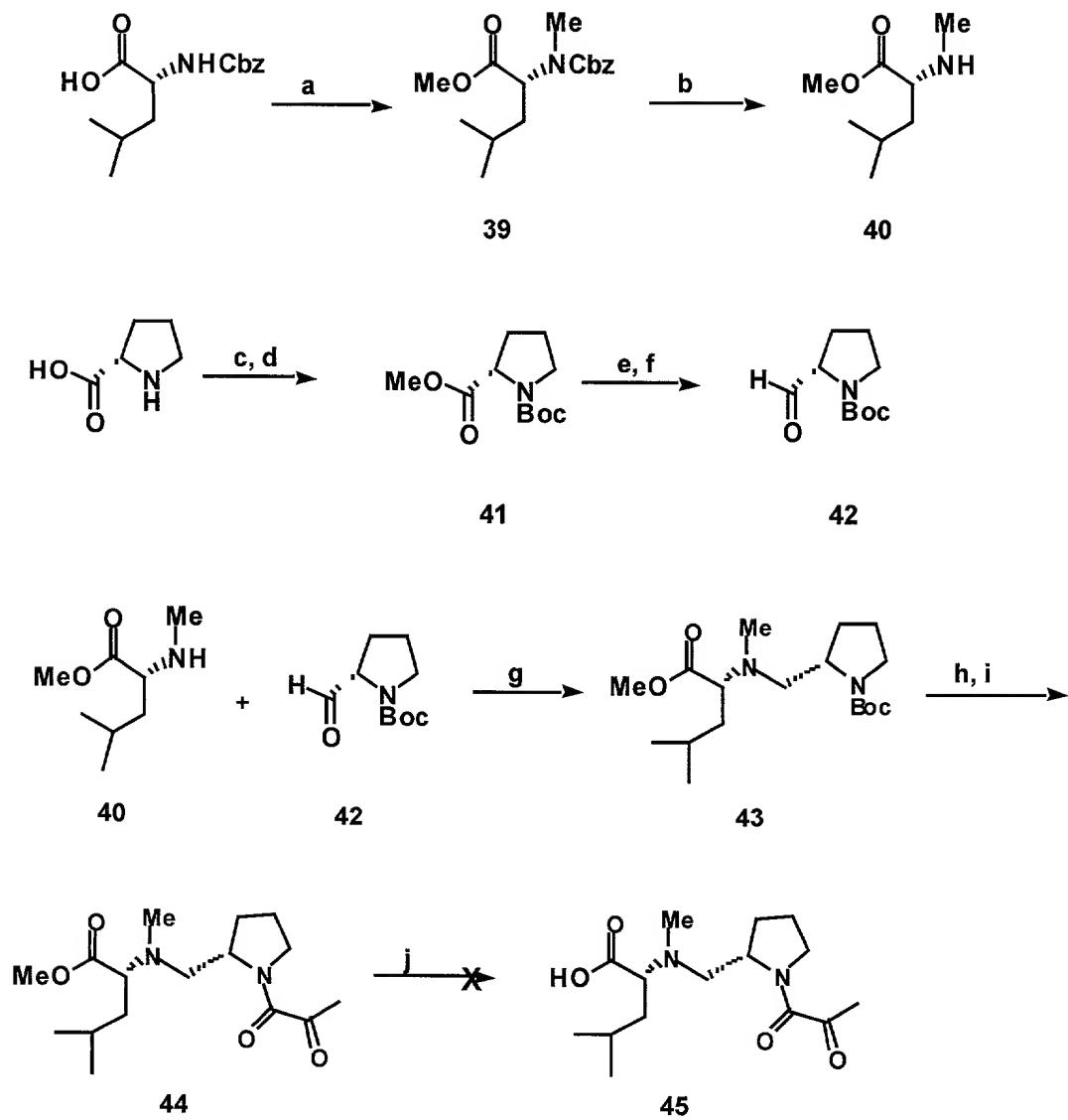
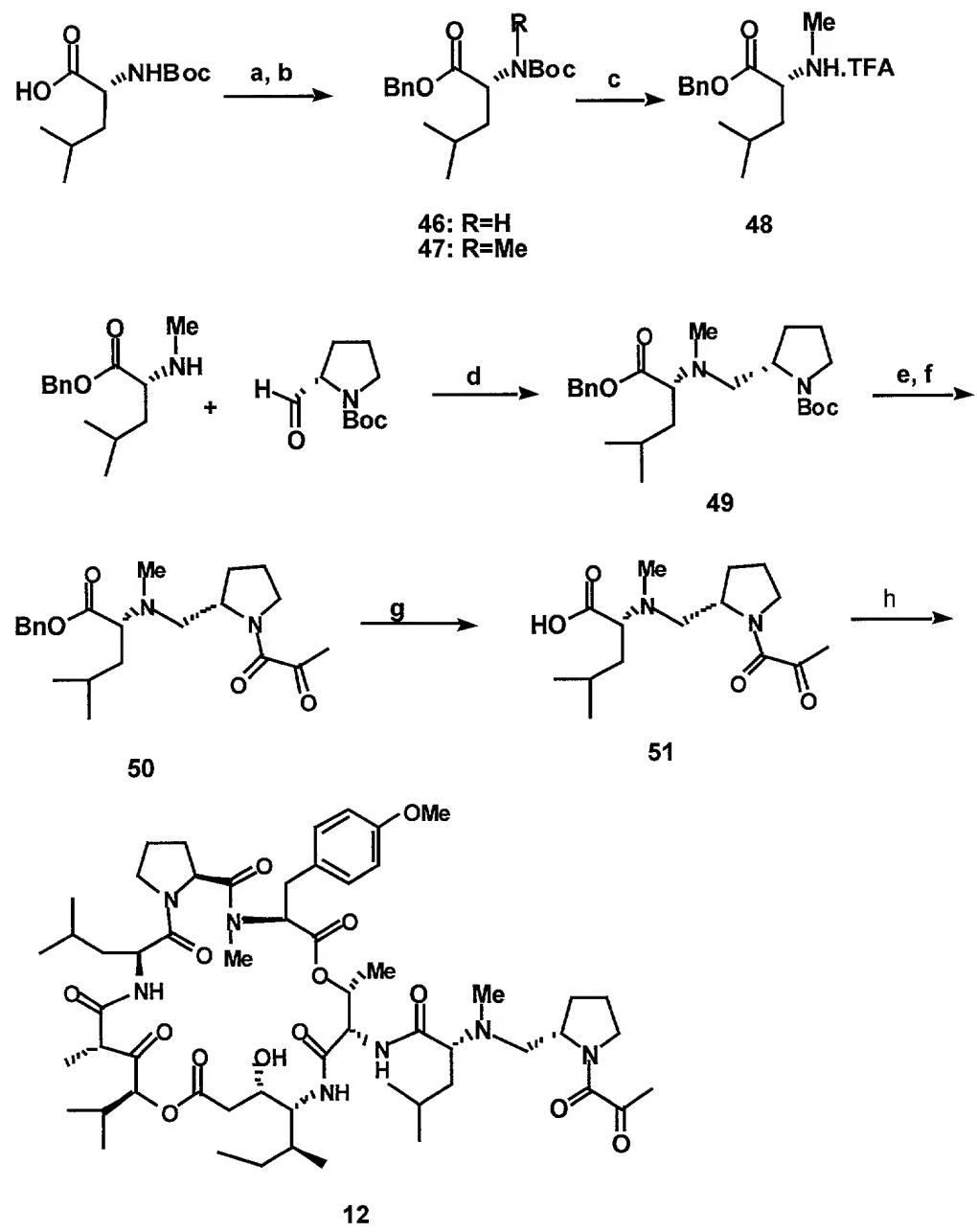


Fig. 2



a.  $\text{Me}_2\text{SO}_4$ ,  $\text{KOH}$ ,  $\text{Bu}_4\text{N}^+\text{HSO}_4^-$ ,  $\text{THF}$ , 78%; b.  $\text{H}_2$ ,  $\text{Pd/C}$ , 99%; c.  $\text{MeOH}$ ,  $\text{SOCl}_2$ , 95%; d.  $\text{Boc}_2\text{O}$ ,  $\text{Et}_3\text{N}$ ,  $\text{CH}_2\text{Cl}_2$ , 85%; e.  $\text{NaBH}_4$ ,  $\text{LiCl}$ ,  $\text{THF/EtOH}$ , 85%; f.  $\text{SO}_3\text{Pyr complex}$ ,  $\text{DMSO}$ ,  $\text{Et}_3\text{N}$ ,  $\text{CH}_2\text{Cl}_2$ ; g.  $\text{Na}(\text{AcO})_3\text{BH}$ ,  $\text{AcOH}$ ,  $\text{CH}_2\text{Cl}_2$ , 88%; h.  $\text{HCl}$  in dioxane, 90%; i. pyruvic acid BOP, NMM,  $\text{CH}_2\text{Cl}_2$ , 70%; j.  $\text{LiOH}\cdot\text{H}_2\text{O}$ ,  $\text{THF/H}_2\text{O}$

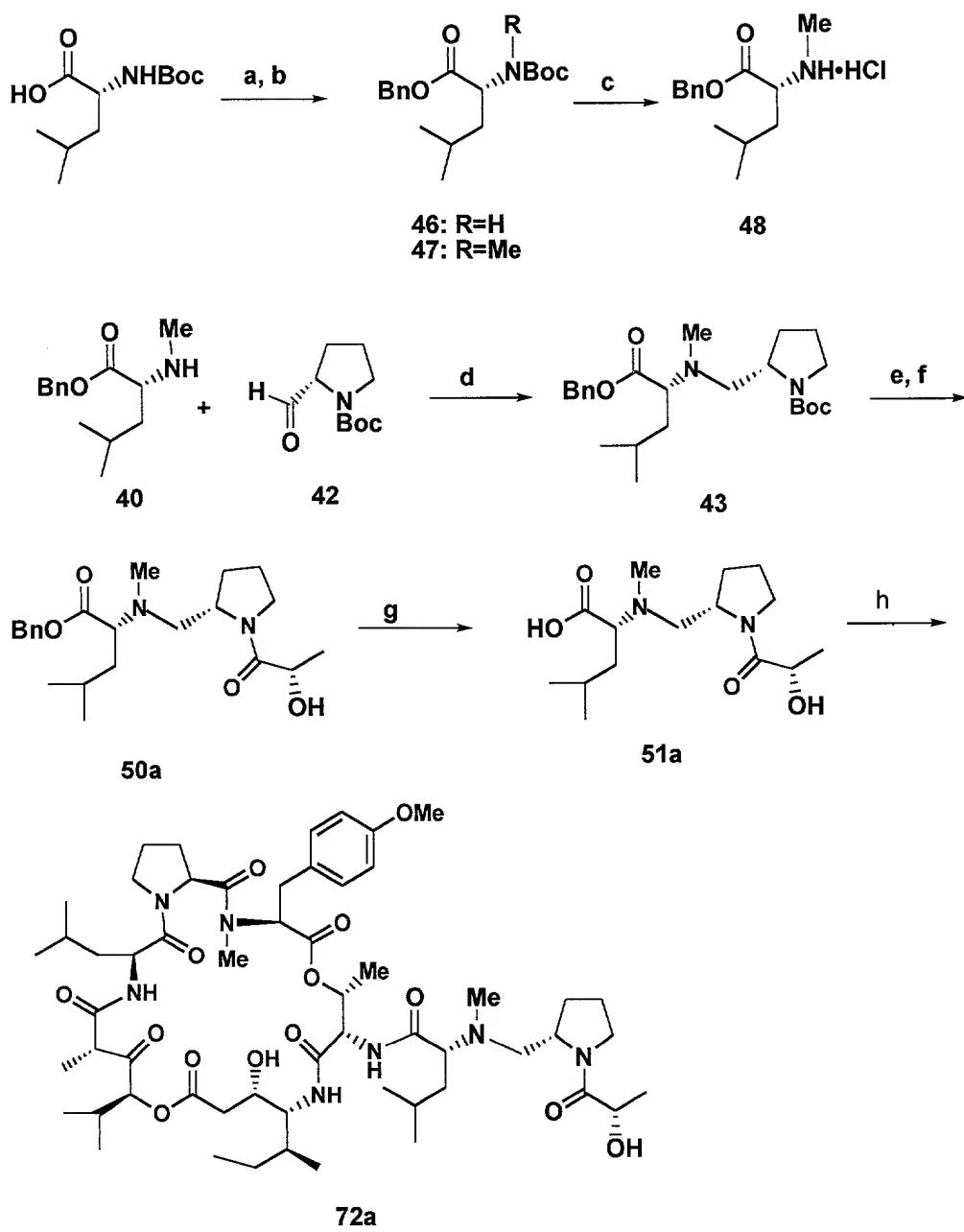
**Fig. 3**



a. Li<sub>2</sub>CO<sub>3</sub>, BnBr, DMF, 85%; b. MeI, NaHMDS, CH<sub>2</sub>Cl<sub>2</sub> 78%; c. TFA/CH<sub>2</sub>Cl<sub>2</sub>, 90%  
d. Na(AcO)<sub>3</sub>BH, AcOH, CH<sub>2</sub>Cl<sub>2</sub>, 88%; e. HCl in dioxane, 90%; f. pyruvic acid, BOP, NMM,  
CH<sub>2</sub>Cl<sub>2</sub>, 70%; g. H<sub>2</sub>, Pd/C, 99%; h. didemnin macrocycle salt, DIEA, HATU, CH<sub>2</sub>Cl<sub>2</sub>, 72%

**Fig. 4**

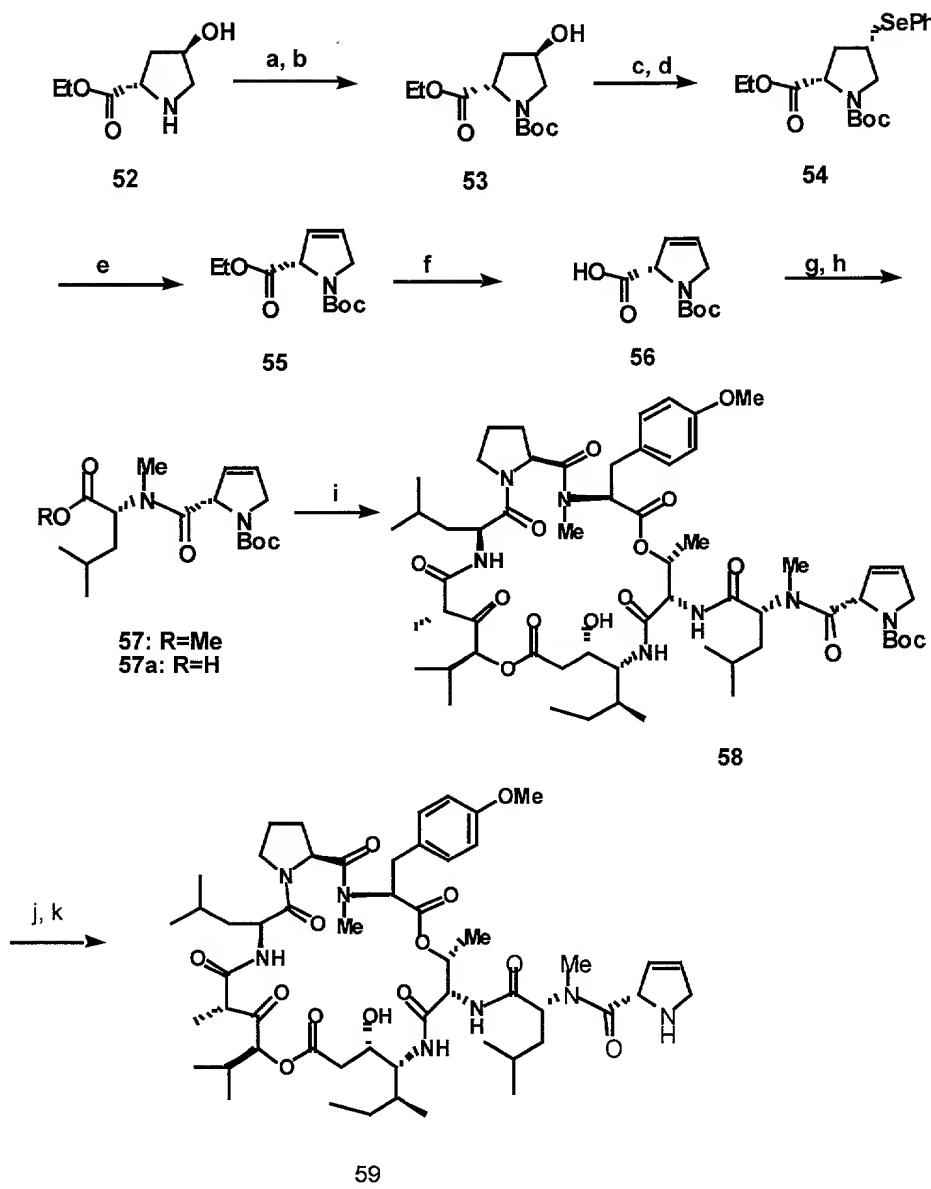
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- a.  $\text{Li}_2\text{CO}_3$ ,  $\text{BnBr}$ ,  $\text{DMF}$ , 85%; b.  $\text{MeI}$ ,  $\text{NaHMDS}$ ,  $\text{CH}_2\text{Cl}_2$  78%; c.  $\text{HCl}$  in dioxane, 98%  
 d.  $\text{Na}(\text{AcO})_3\text{BH}$ ,  $\text{AcOH}$ ,  $\text{CH}_2\text{Cl}_2$ , 88%; e.  $\text{HCl}$  in dioxane, 98%; f. lactic acid,  $\text{BOP}$ ,  $\text{NMM}$ ,  $\text{CH}_2\text{Cl}_2$ , 61%; g.  $\text{H}_2$ ,  $\text{Pd/C}$ ; h. didemnin macrocycle salt,  $\text{DIEA}$ ,  $\text{HATU}$ ,  $\text{CH}_2\text{Cl}_2$ , 72%

**Fig. 5**

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- a. EtOH,  $\text{SOCl}_2$ , 95%; b.  $\text{Boc}_2\text{O}$ ,  $\text{Et}_3\text{N}$ ,  $\text{CH}_2\text{Cl}_2$ , 75%; c.  $\text{MsCl}$ , pyr.,  $\text{CH}_2\text{Cl}_2$ , 86%; d.  $\text{Se}_2\text{Ph}_2$ ,  $\text{NaBH}_4$ , EtOH, 86%; e. Pyr.,  $\text{H}_2\text{O}_2$ ,  $\text{CH}_2\text{Cl}_2$ , 82%; f.  $\text{LiOH} \cdot \text{H}_2\text{O}$ , THF/ $\text{H}_2\text{O}$ , 95%; g.  $N$ -Me-D-Leucine methyl ester, BOP, NMM,  $\text{CH}_2\text{Cl}_2$ , 75%; h.  $\text{HCl}$  dioxane; i. DB macrocycle salt, DIEA, HATU,  $\text{CH}_2\text{Cl}_2$ , 72%; j.  $\text{HCl}$  gas; k.  $\text{NaHCO}_3$ , ethyl acetate

Fig. 6

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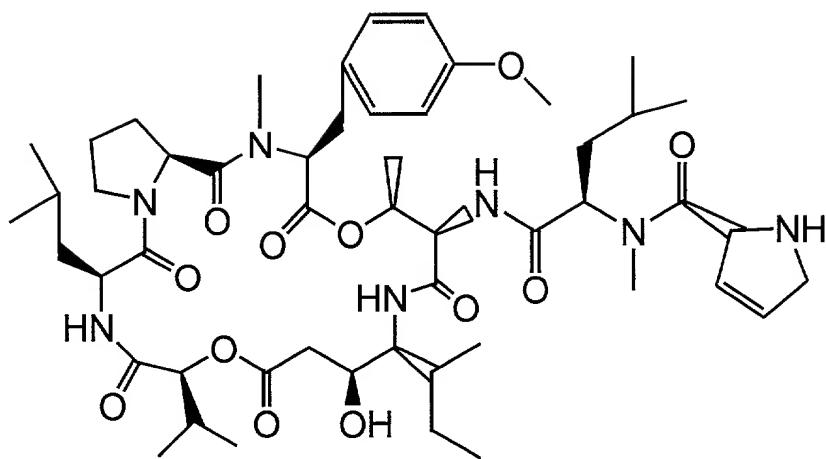


Fig. 7

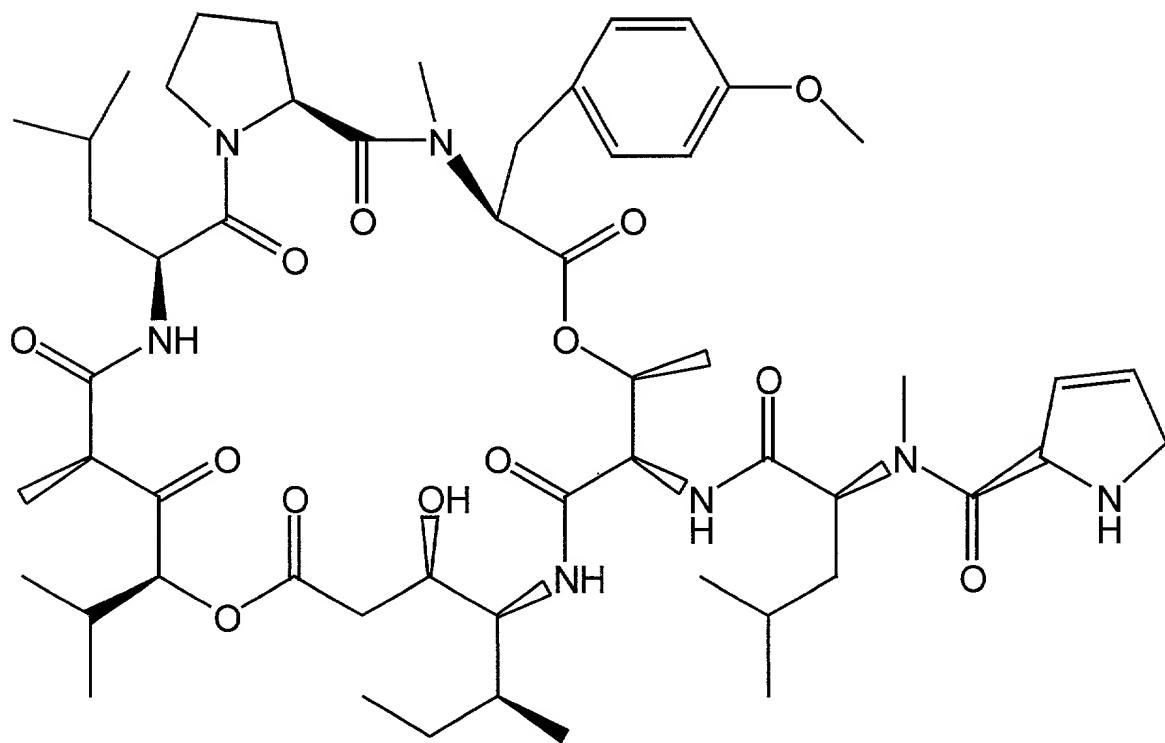


Fig. 8